

# Event-by-Event Fluctuations in Particle Multiplicities in 158-A GeV Pb+Pb Collisions

WA98 Collaboration

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## Abstract

Fluctuations in physical quantities observed in heavy ion collisions have been a topic of interest for some years as they provide important signals of the formation of Quark-Gluon plasma and help in understanding thermalization. We have studied event-by-event fluctuations in the multiplicities of charged particles and photons measured in 158-A GeV Pb+Pb collisions for varying centrality and rapidity. The multiplicity distributions are seen to be near perfect Gaussians for narrow centrality bins. The amount of fluctuations for photons are observed to be larger compared to those of charged particles for the same detector coverage. The role of impact parameter and acceptance of the detectors will be discussed in detail.

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